

REMARKS§103 Rejection of Claims 1-57

Claims 1-57 were rejected under 35 U.S.C. §103(a) as being unpatentable over Paul, U.S. Patent No. 6,198,417 B1 (“Paul”), in view of Lewison, U.S. Patent No. 5,933,453 (“Lewison”). This rejection is respectfully traversed and it is submitted that these claims, in conformance with the foregoing amendment, recite subject matter which is patentable over Paul and Lewison, regardless of whether such references are considered individually or in combination(s).

As correctly noted by the Examiner, Paul does not teach the presently recited “modulation stage” in which a “discrete time pulse width modulated signal” is generated as part of the presently claimed circuit. However, the Examiner contends that Lewison teaches a modulation stage that provides a discrete time pulse width modulation signal, and that it would have been obvious to one of ordinary skill in the art to incorporate the pulse width modulation of Lewison into the circuit of Paul so “as to determine the effective uncorrected duty cycle of the PWM waveform for the next period as taught by Lewison.” It is respectfully submitted that such a combination of the disclosures of Lewison and Paul is neither suggested by either Lewison or Paul, nor obvious to one of ordinary skill in the art. Indeed, it is submitted that so many differences exist between the teachings of Lewison and Paul, in both general and specific details, that it is counterintuitive to combine these references to arrive at the presently claimed subject matter.

For example, Paul and Lewison, in general, are concerned with virtually opposite, or at least mutually exclusive, circuit characteristics. More specifically, the circuit of Paul is a circuit specifically for use in converting an analog signal to its digital signal equivalent, and is deterministic. In contrast thereto, the circuit of Lewison is specifically concerned with providing a drive signal to a load, such as a motor, and is probabilistic. See Lewison at column 4, line 1, through column 5, line 55. As is well known, a system cannot be both probabilistic and deterministic;

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such features are mutually exclusive. Accordingly, absent some specific teaching or direction, simply combining the probabilistic PWM circuit feature of Lewison into the deterministic circuit of Paul would certainly, if not be counterintuitive, at least not be obvious to one of ordinary skill in the art.

Moreover, the circuit of Paul, particularly the modulator portion, is a circuit specifically designed and described to be operative with one or more feedback loops. In contrast thereto, the circuitry of Lewison in which the pulse width modulator is used is not taught as using any form of feedback of the pulse width modulated signal. Accordingly, while Lewison may teach the use of a pulse width modulator, such teaching does not include, nor does it suggest, the use of any feedback loop involving the pulse width modulated signal, much less how one might be inclined to insert the probabilistic pulse width modulator circuit of Lewison in with no disclosed feedback connection into the deterministic circuit of Paul which is replete with feedback loops.

Accordingly, it is respectfully submitted that the circuits of Paul and Lewison have significant distinctions in both general characteristics (deterministic versus probabilistic) and specific characteristics (multiple feedback loops versus no feedback whatsoever). Therefore, if not counterintuitive, it would at least not be obvious to one of ordinary skill in the art to insert the probabilistic pulse width modulator, with no feedback connections, of Lewison into the deterministic circuit, replete with multiple feedback loops, of Paul.

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Conclusion

Claims 1-57 remain pending in this case. Based upon the foregoing amendment and remarks, it is respectfully submitted that these claims are allowable, and reconsideration and early allowance of these claims are requested.

Respectfully submitted,

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